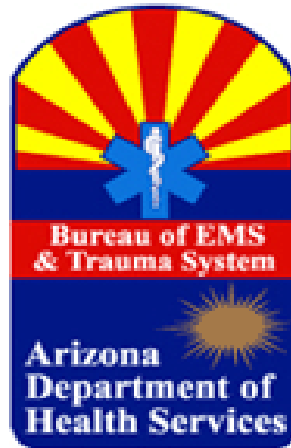


**ARIZONA DEPARTMENT OF HEALTH SERVICES**  
**BUREAU OF EMERGENCY MEDICAL SERVICES AND TRAUMA SYSTEM**



**JUNE 2013**  
**COCONINO COUNTY REPORT**  
**ASTR 2011**

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**Data and Quality Assurance**

**Purpose:**

The purpose of this report is to describe the incidence of trauma in Coconino County using the Arizona State Trauma Registry (ASTR). This information can be used to assist in the development and strengthening of injury prevention programs at the county level.

**Methods:**

In 2011, the Arizona State Trauma Registry (ASTR) received data from 23 state-designated trauma centers. Four additional healthcare institutions participated in the registry but were not designated. The Arizona EMS and Trauma System has eight Level I trauma centers - six located in the central county of Maricopa with 60 percent of the state's population; the remaining two Level I trauma centers are respectively located in the northern-most county of Coconino and the southern county of Pima. For the 2011 reporting year, there were 15 designated Level IV trauma centers dispersed primarily in the rural areas of the state. There are a total of 29,877 records in the ASTR for 2011.

**Limitations:**

Data is limited to participating agencies in the state. Information on patients that are transported out of Arizona will be missed as well as those seen at hospitals that are not participating. Injuries included in this registry are those which fit the [ASTR inclusion criteria](#). As such, injuries reported are more severe injuries, and therefore not a complete picture of injury in Coconino County.

**Geo-Population:**

Arizona is 400 miles long and 310 miles wide for a total area of 114,006 square miles. The topography of the state is 364 square miles of water and a blend of deserts, mountains, and plateaus. Arizona shares contiguous borders with the states of California, Colorado, Nevada, New Mexico, and Utah. Internationally, the Mexican states of Sonora, Chihuahua, and Baja California Norte share a border with Arizona.

The total reported population in 2011 was 6,438,178; this was up from the 2010 reported number of 6,392,017 residents <sup>1</sup>. In 2011, 84.1 percent of the population lived in urban counties (Maricopa, Pima, Pinal, and Yuma). The remaining counties (Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Mohave, Navajo, Santa Cruz, and Yavapai) were home to 15.9 percent of the population.

Additionally, Arizona has within its borders twenty-two (22) federally recognized American Indian tribes, comprising a 2011 collective population of 296,529, of which 162,119 (55 percent) reside on reservations and tribal lands.

<sup>1</sup> <http://www.azdhs.gov/plan/menu/info/pop/pop11/pd11.htm>

## Arizona State Designated Trauma Centers

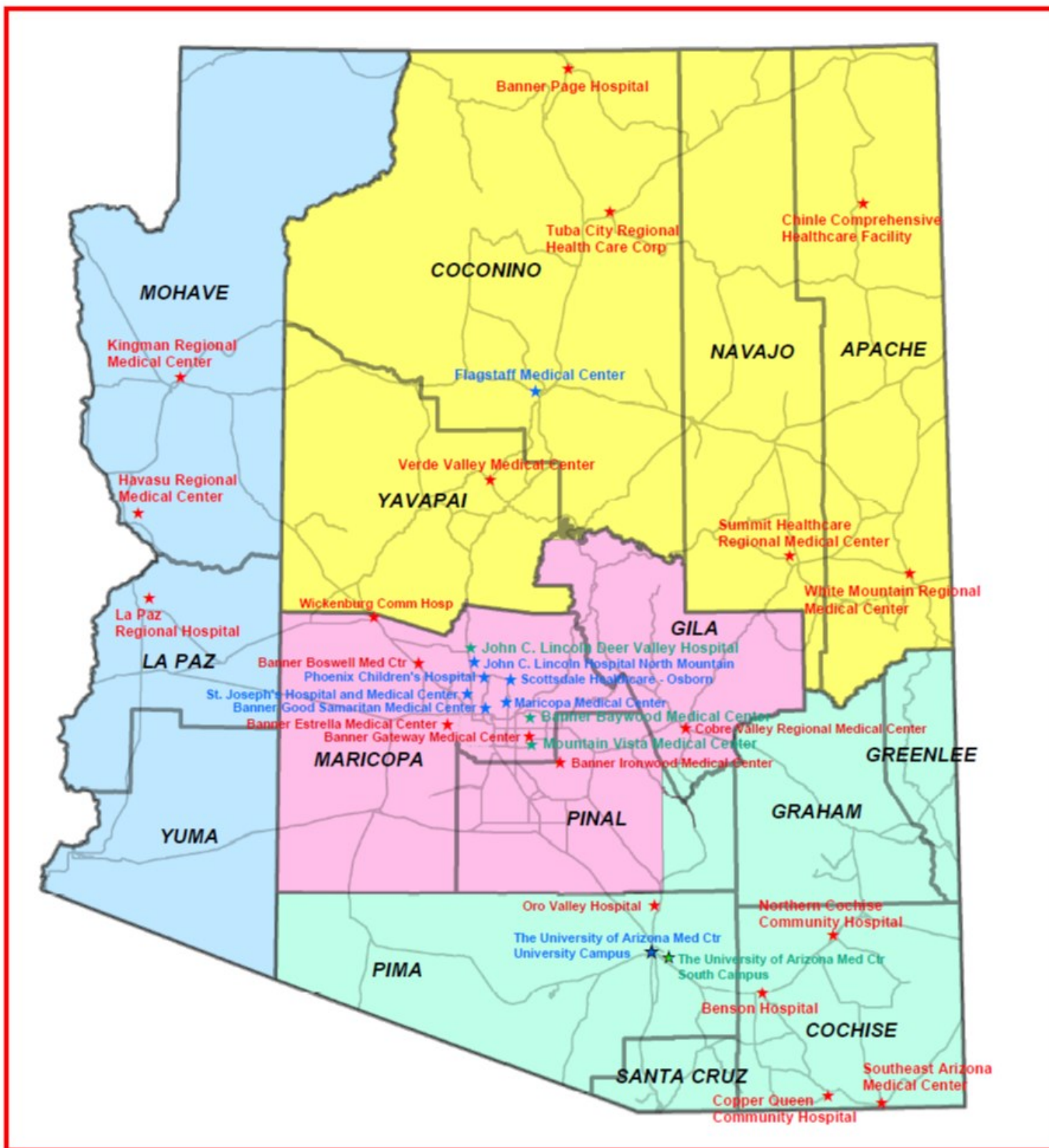
Health Care Institution	Address	Effective Date	Expiration Date
<b>Level I Trauma Centers</b>			
Banner Good Samaritan Medical Center	925 E. McDowell Rd., Phoenix, AZ 85006	11/19/11	11/19/14
Flagstaff Medical Center	1200 N. Beaver St., Flagstaff, AZ 86001	05/27/11	05/27/14
John C. Lincoln - North Mountain	250 E. Dunlap Ave., Phoenix, AZ 85020	04/23/11	04/23/14
Maricopa Medical Center	2601 E. Roosevelt, Phoenix, AZ 85008	12/20/11	12/20/14
Phoenix Children's Hospital	1919 E. Thomas Rd., Phoenix, AZ 85016	08/31/12	08/31/15
St. Joseph's Hospital & Medical Center	350 W. Thomas Rd., Phoenix, AZ 85013	11/20/10	11/20/13
Scottsdale Healthcare – Osborn	7400 E. Osborn, Scottsdale, AZ 85251	10/25/11	10/25/14
The University of Arizona Medical Center – University Campus	1501 N. Campbell Ave., Tucson, AZ 85724	11/12/11	11/12/14
<b>Level III Trauma Centers</b>			
Banner Baywood Medical Center (Provisional Designation)	6644 E. Baywood Ave., Mesa, AZ 85206	07/30/12	01/30/14
John C. Lincoln Deer Valley Hospital (Provisional Designation)	19829 N. 27 <sup>th</sup> Ave., Phoenix, AZ 85027	02/04/13	10/04/14
Mountain Vista Medical Center (Provisional Designation)	1301 S. Crismon Rd., Mesa, AZ 85209	02/24/12	08/24/13
The University of Arizona Medical Center South Campus (Provisional Designation)	2800 E. Ajo Way, Tucson, AZ 85713	02/13/12	08/13/13
<b>Level IV Trauma Centers</b>			
Banner Boswell Medical Center	10401 W. Thunderbird Blvd., Sun City, AZ 85351	12/17/12	12/17/15
Banner Estrella Medical Center	9201 W. Thomas Road, Phoenix, AZ 85037	08/30/12	08/30/15
Banner Gateway Medical Center	1900 N. Higley Road, Gilbert, AZ 85234	01/02/13	01/02/16
Banner Ironwood Medical Center	37000 N. Gantzel Rd., San Tan Valley, AZ 85140	10/11/12	10/11/15
Banner Page Hospital	501 N. Navajo, Page, AZ 86040	11/05/11	11/05/14
Benson Hospital	450 S. Ocotillo Ave., Benson, AZ 85602	03/03/11	03/03/14
Chinle Comprehensive Health Care Facility	P.O. Drawer PH, Chinle, AZ 86503	09/09/10	09/09/13
Cobre Valley Regional Medical Center	5880 S. Hospital Dr., Globe, AZ 85501	11/26/12	11/26/15
Copper Queen Community Hospital	101 Cole Ave., Bisbee, AZ 85603	12/01/12	12/01/15
Havasü Regional Medical Center	101 Civic Center Ln., Lake Havasu City, AZ 86403	01/20/11	01/20/14
Kingman Regional Medical Center	3269 Stockton Hill Rd., Kingman, AZ 86409	10/15/12	10/15/15
La Paz Regional Hospital	1200 W. Mohave Rd., Parker, AZ 85344	06/02/12	06/02/15

Health Care Institution	Address	Effective Date	Expiration Date
Northern Cochise Community Hospital	901 W. Rex Allen Dr., Willcox, AZ 85643	12/04/11	12/04/14
Oro Valley Hospital	1551 East Tangerine Road, Oro Valley, AZ 85755	4/18/13	4/18/16
Southeast Arizona Medical Center	2174 W. Oak Ave., Douglas, AZ 85607	08/18/11	08/18/14
Summit Healthcare Regional Medical Center	2200 Show Low Lake Rd., Show Low, AZ 85901	08/12/11	08/12/14
Tuba City Regional Health Care Corp.	P.O. Box 600, Tuba City, AZ 86045	05/06/12	05/06/15
Verde Valley Medical Center	269 S. Candy Ln., Cottonwood, AZ 86326	08/18/11	08/18/14
White Mountain Regional Medical Center	118 S. Mountain Ave., Springerville, AZ 85938	06/18/12	06/18/15
Wickenburg Community Hospital	520 Rose Ln., Wickenburg, AZ 85390	08/08/11	08/08/14

Updated as of May 1, 2013

# EMS REGIONS AND TRAUMA CENTERS

May 1, 2013



Level I Trauma Center

Level III Trauma Center (Provisional)

Level IV Trauma Center

**FIGURE 1: Coconino County population by age, gender, and race/ethnicity, AZ Health & Vital Statistics**

Group		Population	Percent
Age	<1	1,728	1.3%
	1-4	7,197	5.4%
	5-9	8,743	6.5%
	10-14	8,579	6.4%
	15-19	13,255	9.9%
	20-24	15,896	11.8%
	25-29	9,925	7.4%
	30-34	8,176	6.1%
	35-39	7,839	5.8%
	40-44	7,640	5.7%
	45-49	8,653	6.4%
	50-54	9,279	6.9%
	55-59	8,667	6.5%
	60-64	6,673	5.0%
	65-69	4,453	3.3%
	70-74	2,983	2.2%
	75-79	2,035	1.5%
	80-84	1,350	1.0%
	85+	1,091	0.8%
Gender	Male	66,560	49.6%
	Female	67,602	50.4%
Race/Ethnicity	White non-Hispanic	74,778	55.7%
	Hispanic or Latino	16,568	12.3%
	Black or African American	1,907	1.4%
	American Indian or Alaska Native	38,790	28.9%
	Asian or Pacific Islander	2,120	1.6%
Total		134,162	100%

**FIGURE 2: Trauma frequency and rate per 100,000 by county**

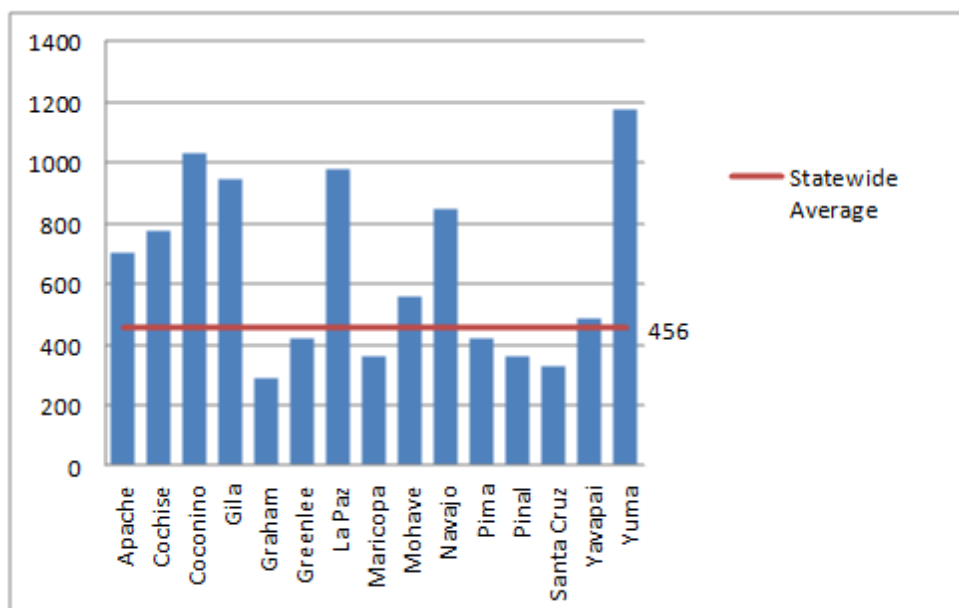
County of Injury	Total Population	Percent of Population	Trauma Count	Percent of All Traumas	Trauma Rate per 100,000
Apache	71,991	1.1%	507	1.7%	704
Cochise	130,537	2.0%	1,009	3.4%	773
Coconino	134,162	2.1%	1,383	4.7%	1,031
Gila	53,577	0.8%	506	1.7%	944
Graham	37,710	0.6%	109	0.4%	289
Greenlee	8,380	0.1%	35	0.1%	418
La Paz	20,730	0.3%	203	0.7%	979
Maricopa	3,843,370	59.7%	13,846	47.2%	360
Mohave	200,417	3.1%	1,124	3.8%	561
Navajo	107,226	1.7%	910	3.1%	849
Pima	986,081	15.3%	4,164	14.2%	422
Pinal	384,231	6.0%	1,387	4.7%	361
Santa Cruz	48,088	0.7%	159	0.5%	331
Yavapai	211,247	3.3%	1,029	3.5%	487
Yuma	200,431	3.1%	2,350	8.0%	1,172
Other	.	.	627	2.1%	.
Total	6,438,178	100.0%	29,348	98.2%	456

*Missing = 529*

Statewide, there were 29,877 traumatic injuries seen at state designated trauma centers– a rate of 456 per 100,000 Arizona residents.

Coconino County makes up about two percent of the total population of Arizona. Injuries occurring in the county make up about 4.7 percent of the trauma cases from state designated trauma centers. The county-specific trauma rate, 1,031 per 100,000 county residents, is higher than the state average (Figure 3).

**FIGURE 3: County-specific trauma rates per 100,000 residents**





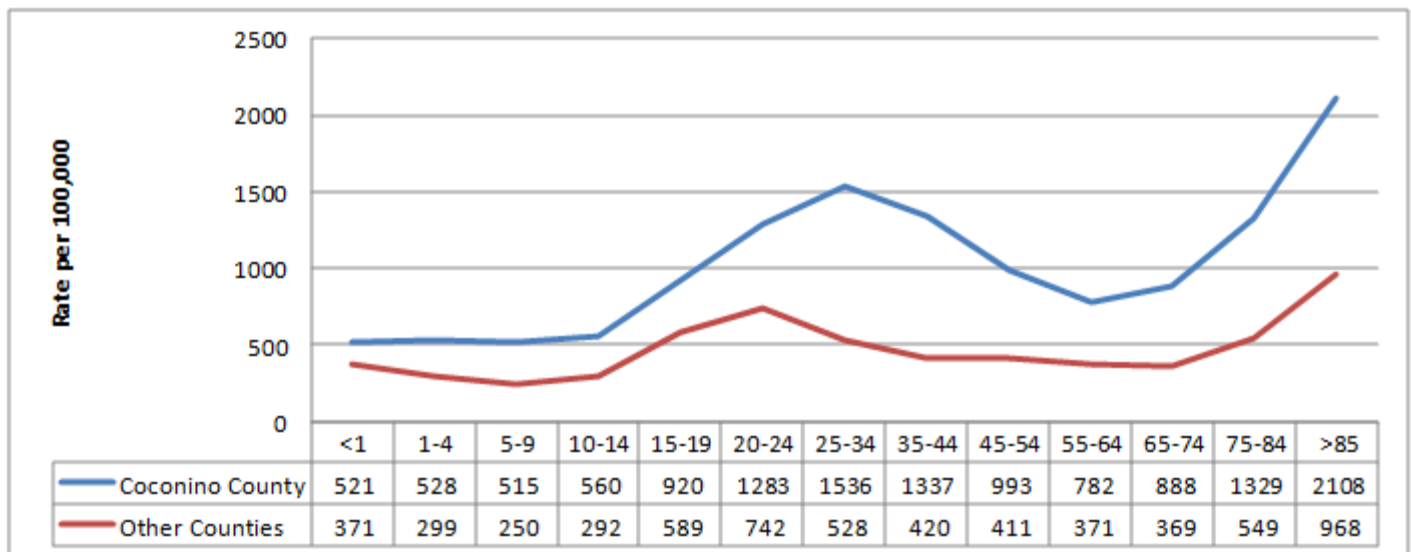
**FIGURE 4: Frequency and rate of trauma by age, race/ethnicity, and gender in Coconino County**

Group		Count	Percent	Rate per 100,000
Age	<1	*	*	521
	1-4	38	2.7%	528
	5-9	45	3.3%	515
	10-14	48	3.5%	560
	15-19	122	8.8%	920
	20-24	204	14.8%	1,283
	25-34	278	20.1%	1,536
	35-44	207	15.0%	1,337
	45-54	178	12.9%	993
	55-64	120	8.7%	782
	65-74	66	4.8%	888
	75-84	45	3.3%	1,329
	>85	23	1.7%	2,108
Gender	Female	474	34.3%	701
	Male	909	65.7%	1,366
Race/Ethnicity	Missing	11	0.8%	.
	Hispanic	96	6.9%	579
	White	548	39.6%	733
	American Indian or Alaska Native	675	48.8%	1740
	Black or African American	12	0.9%	629
	Asian Pacific Islander	34	2.5%	1,604
	Other	7	0.5%	.
Total		1,383	100.0%	1,031

\*10 or fewer observations

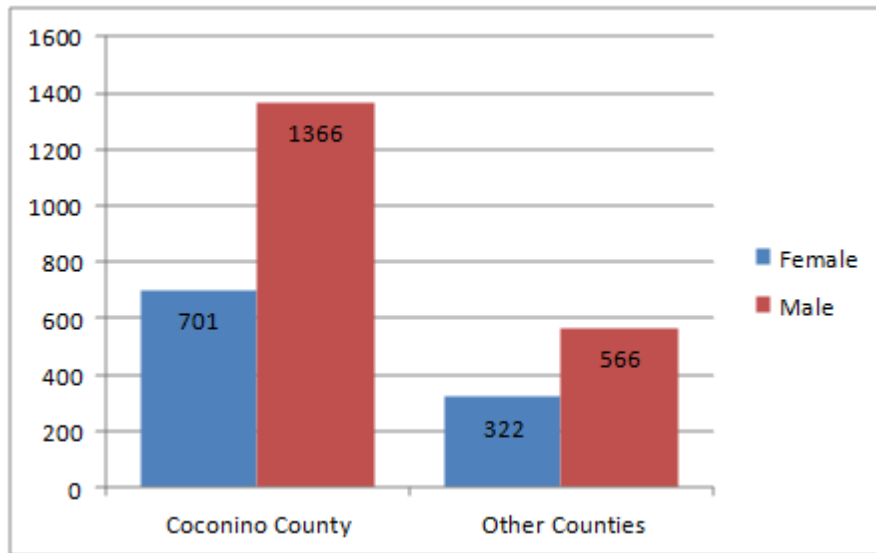
The trauma rate is higher in Coconino County for all age groups except the 1-4 age group (Figure 4), as compared to the rest of the state. The highest trauma rate is among the >85 age group (2,108 traumatic injuries per 100,000 county residents), due to the small number of Coconino County residents that are within that age group.

**FIGURE 5: Trauma rate per 100,000 residents by age**



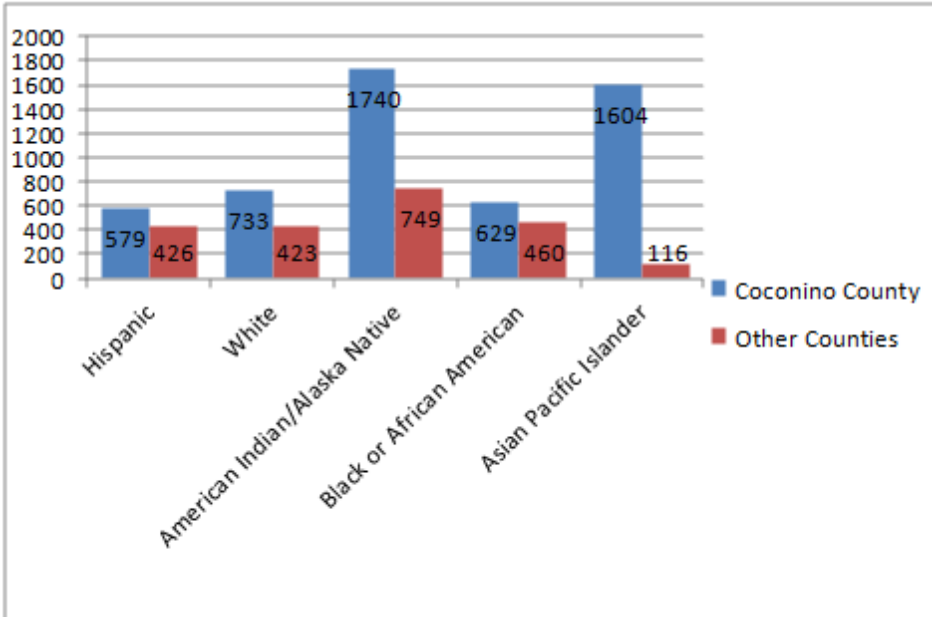


**FIGURE 6: Trauma rate per 100,000 residents by gender**



Both males and females in Coconino County have higher trauma rates than their counterparts in other counties (Figure 6).

**FIGURE 7: Trauma rate per 100,000 residents by race/ethnicity**



The trauma rate for all race/ethnicities is higher in Coconino County than in other counties (Figure 7).

Figure 9 shows the top causes of traumatic injury in Coconino County, as compared with other counties (rates per 100,000).

**FIGURE 8: Frequency of top causes of trauma in Coconino County**

Cause	Count	Percent
Motor Vehicle Traffic	479	34.6%
Falls	285	20.6%
Struck by/Against	178	12.9%
Transport, other	155	11.2%
Cut/Pierce	80	5.8%
Other Trauma	206	14.9%
<b>Total</b>	<b>1,383</b>	<b>100%</b>

**FIGURE 9: Top causes of trauma, rates per 100,000 residents**

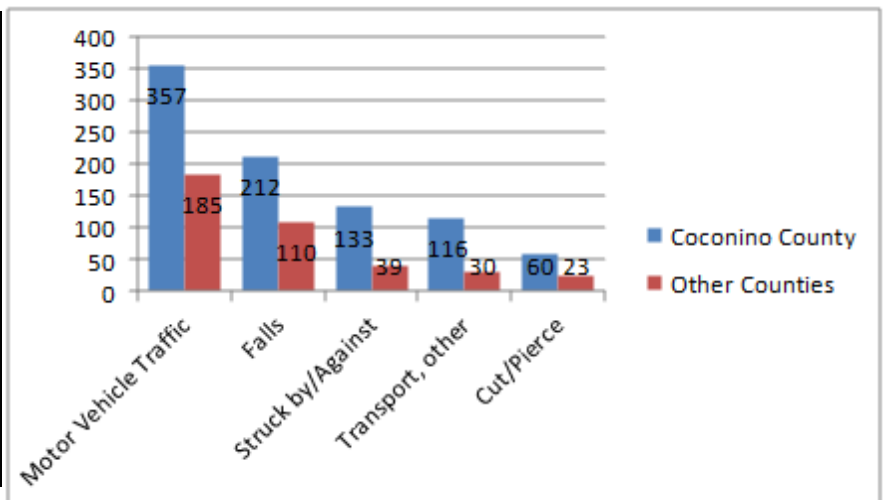
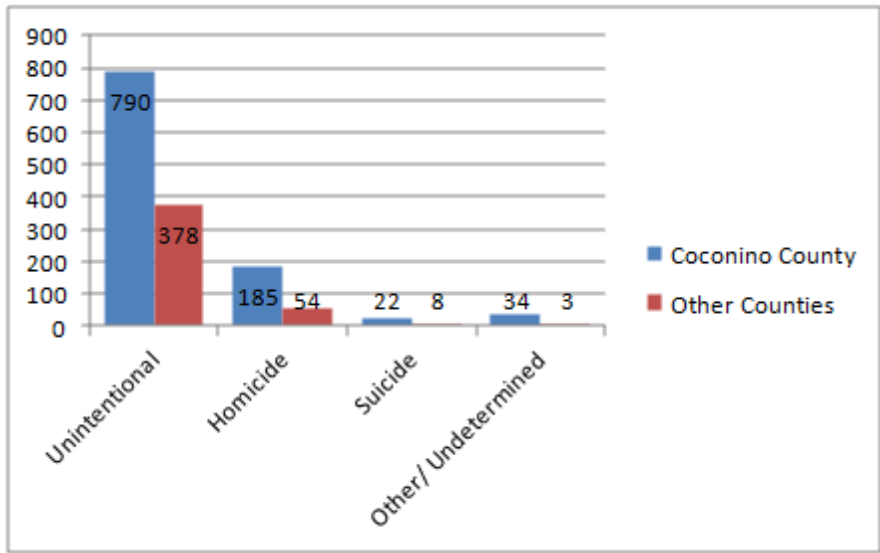


FIGURE 10: Intention of trauma, rate per 100,000 residents



The rates of all types of trauma intent in Coconino County are higher than in other Arizona counties, especially unintentional intent and homicidal intent (Figure 10).

FIGURE 11: Substance use in traumatic injuries in Coconino County

Documented alcohol and drug use was present in 33.4% and 6.9% of traumatic injuries in Coconino County, respectively (Figure 11).

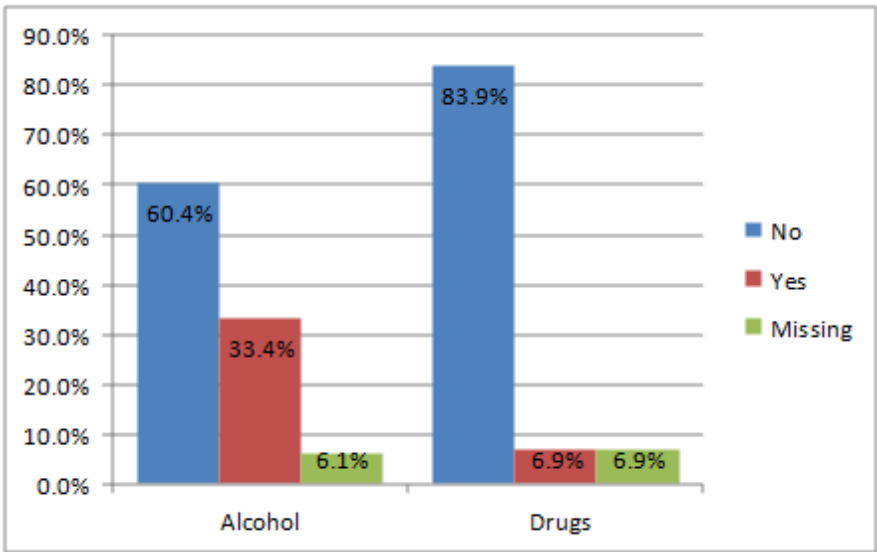
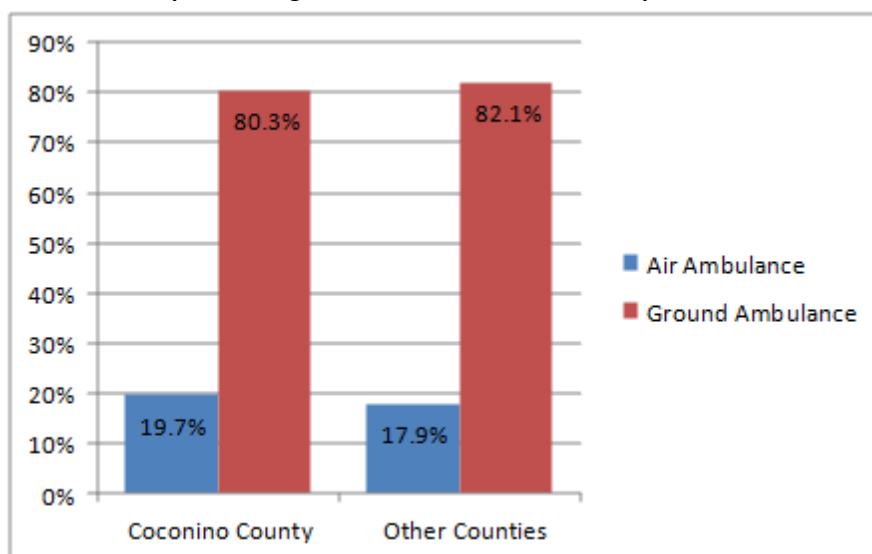


FIGURE 12: Frequency of substance use in traumatic injuries in Coconino County

Substance Use		Frequency	Percent
Alcohol	No	836	60.4%
	Yes	462	33.4%
	Missing	85	6.1%
	Total	1,383	100%
Drugs	No	1,161	83.9%
	Yes	127	6.9%
	Missing	95	6.9%
	Total	1,383	100%

**FIGURE 13: Proportion of ground and air ambulance transports in Coconino County**



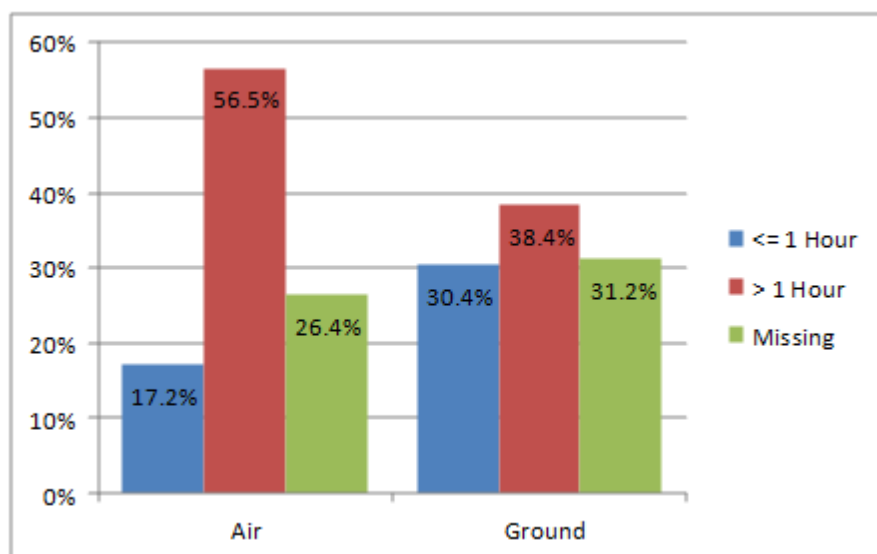
**FIGURE 14: Count of ground and air ambulance transports**

	Air	Ground	Other	Missing
<b>Coconino County</b>	239	974	168	2
<b>Other Counties</b>	4,334	19,869	3,649	113

**FIGURE 15: Golden hour by transport type**

The term “golden hour” refers to the hour immediately following traumatic injury. Theoretically, the chance of survival is highest when medical treatment to prevent irreversible internal damage is obtained within this time period.

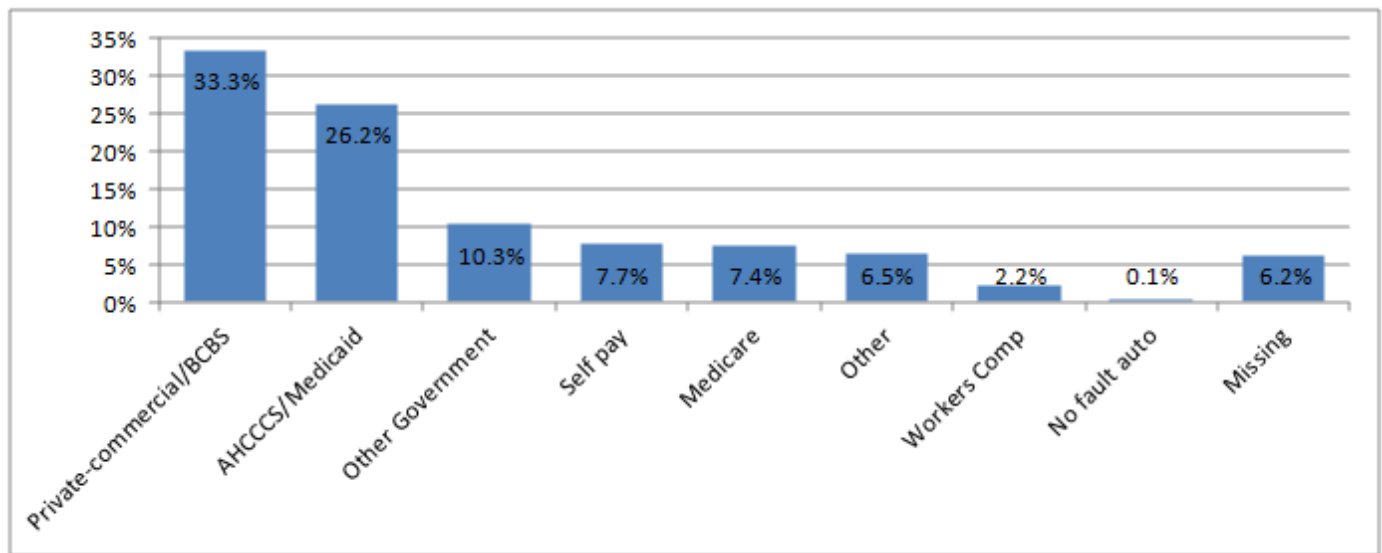
Due to the large amount of missing data on golden hour, results on the proportion of patients arriving at the hospital within one hour are not conclusive.



**FIGURE 16: Count of golden hour by transport type to trauma center**

Golden Hour	Air Ambulance		Ground Ambulance		Total	
	Count	Percent	Count	Percent	Count	Percent
<= 1 Hour	41	17.2%	296	30.4%	337	27.8%
> 1 Hour	135	56.5%	374	38.4%	509	42.0%
Missing	63	26.4%	304	31.2%	367	30.3%
Total	239	100%	974	100%	1,213	100%

**FIGURE 17: Primary payer in Coconino County**



**FIGURE 18: Count of primary payer in Coconino County**

Primary Payer	Frequency	Percent
Private-commercial/BCBS	461	33.3%
AHCCCS/Medicaid	362	26.2%
Other Government	142	10.3%
Self pay	107	7.7%
Medicare	103	7.4%
Other	90	6.5%
Workers Comp	30	2.2%
No fault auto	2	0.1%
Missing	86	6.2%

Private-commercial/BCBS is the primary payment source for trauma-related hospital visits in Coconino County (Figures 17 & 18).

The median charge in Coconino County in 2011 was \$13,051 (Figure 19).

**FIGURE 19: Charges & reimbursement by primary payer in Coconino County**

Primary Payer	Total Charges	Median Charges	Total Reimbursement
Private-commercial/BCBS	\$ 17,682,217	\$ 16,786	\$ 9,213,796
AHCCCS/Medicaid	\$ 7,243,969	\$ 7,742	\$ 2,793,424
Other Government	\$ 2,455,340	\$ 7,652	\$ 1,024,909
Self pay	\$ 4,530,090	\$ 16,200	\$ 630,911
Medicare	\$ 3,170,688	\$ 15,908	\$ 1,341,544
Other	\$ 3,544,342	\$ 19,503	\$ 916,684
Workers Comp	\$ 1,579,830	\$ 26,035	\$ 1,049,723
No fault auto	\$ 5,664	\$ 2,832	\$ 3,918
Not documented	\$ 451,026	\$ 22,520	\$ 24,331
<b>Total</b>	<b>\$ 40,663,168</b>	<b>\$ 13,051</b>	<b>\$ 16,999,240</b>